



Dart Hawkesbury
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Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

F162577

D350-748-103
Job Sheet 157387



Part No: D350-748-103

Job Qty: 1 ea

Part Name: AS350 / AS355 Stainless Steel Fwd Crosstube



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 10/2/17

Job Tracking No:

Due Date: 10/31/17

Created By: Linda Lacelle

Type: Stock

Description:

Customer: Air Methods Corporation (CAMET01)

7301 South Peoria Street Englewood, CO, 80112 USA ph:(303) 792-7400

Note: DWG REV A IPP REV:A 15.03.23 NEW ISSUE DD VERF:JLM

Ship Via:

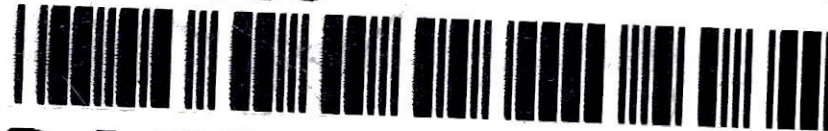
Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
D350-748-103	DWG REV A IPP REV:A 15.03.23 NEW ISSUE DD VERF:JLM		0.000	
AS350 / AS355 Stainless Steel				
Fwd Crosstube				
AETC-1032			0.000	
Insert				
AN4-41A			0.000	
Bolt				
AN4-6A			0.000	
Bolt				
AN5-32A			0.000	
Bolt				
D350-748-143TRN	DWG REV A NEW ISSUE - PRELIM - LL 12.05.08		0.000	
Ss Crosstube Turning Detail				
D3500-1	DWG REV C IPP Rev:A New Issue 06-06-15 JLM		0.000	
Saddle				
D3501-1	DWG REV A IPP Rev:A New Issue 06-05-09 JLM		0.000	
Bushing				
D3502-1	DWG REV B IPP Rev:A New Issue 06-07-06 JLM IPP Rev:B Add tooling hole 07-03-28 Esr rev C added DT9430 08.11.03 EC verified by:DD		0.000	
Support				
D5123-7	DWG REV D IPP REV:A 15.03.19 NEW ISSUE DD VERF:JLM IPP REV:B 16-11-11 AS PER DWG REV.D DD VERF:JLM		0.000	
Clamp Cushion				
MS21042L4			0.000	
Nut				
MS21042L5			0.000	
Nut				
MS21920-20			0.000	
Clamp				
MS51958-63			0.000	
Screw				
NAS1149C0363R			0.000	
Washer				
NAS1149D0463J			0.000	
Washer				
NAS1149D0563J			0.000	
Washer				

Job Routing

Op No	Operation	Qty	Due Date	Standard	Workcenter/Supplier
					Workcenter / Supplier Lead Time

DART
AEROSPACE
S004735



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CANADA
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AS350 / AS355 Stainless Steel Fwd Crosstube

PART NO: D350-748-103
Revision:
Operation: QC
Change No:

Mfg Date: 11/15/17
Job No: 157387

			Setup hrs	Run Hrs	
90	Start up Operation	1 Ea 10/28/17	0.00	0.00	Start up container
100	DC	1 pcs 10/28/17	0.00	0.00	DC
110	CNC Bend Skid tubes	1 pcs 10/30/17	6.53	3.45	CNC Bend Skid tube
120	Crosstubes	1 pcs 10/30/17	0.00	2.08	Crosstube
127	QC	1 pcs 10/30/17	0.00	0.00	QC15 PD 17-11-2
128	Crosstubes	1 pcs 10/30/17	0.00	2.08	Crosstube
130	Crosstubes	1 pcs 10/30/17	0.00	2.08	Crosstube DAS
140	QC	1 pcs 10/30/17	0.00	0.00	QC5 38
174	Outsource	1 pcs 10/30/17	0.00	0.00	Outsource2 9-89
176	Packaging	1 pcs 10/30/17	0.00	0.00	Packaging2
178	QC	1 pcs 10/30/17	0.00	0.00	QC5 17-11-2017
180	Spray Paint	1 pcs 10/30/17	0.00	1.00	Spray Paint AS DNV 11 2017
190	QC	1 pcs 10/30/17	0.00	0.00	QC14 38
200	Crosstubes	1 pcs 10/31/17	0.00	2.08	Crosstube AS DNV 12 2017
210	QC	1 pcs 10/31/17	0.00	0.00	QC5 23 38
220	Packaging	1 pcs 10/31/17	0.00	0.00	Packaging1 9-89
230	QC	1 pcs 10/31/17	0.00	0.00	QC4 7.11.17
240	Packaging	1 pcs 10/31/17	0.00	0.00	Packaging3 5m/s
250	QC21-FG	1 Ea 10/31/17	0.00	0.00	QC21 DAS 21 9-89

Part Op 100 - Photocopy bluefile & type labels per PPPD350-748-105 CHG001

Descriptions: 110 - Bend tube as per Dwg D350-748-143 using CNC bender program D350F and Folio FT

120 - ****VERIFY CROSTUBE DIMENSIONS AS PER DWG****

127 - ***MARK CUT LINES***

128 - CUT TUBE AT HEIGHT ON FAI SHEET 0.055"

130 - 2- Drill Tube as per Dwg D350-748-143 Using DT8876 A,B & C Drill Jigs, 4- Engrave Part # and Batch # as per Dwg D350-748-143 5- Remove all marks from tube within limits of D350-748-143

140 - CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)

174 - ISSUE P/O TO ACUREN:

180 - ***VERIFY BY BATCH # TO MATCH W/O 1. Apply Axalta 13205S Cleaner

inside and outside crosstube per QSI 005 4.1.4 ***LIMIT AIR PRESSURE TO 50 PSI WHEN INSTALLING AETC-1032 INSERT AND ONLY EXPAND INSERT ONCE***

190 - Then, Wrap in plastic bag to protect from scratches

200 - INSTALL GROUND WIRE INSERT, THEN INSERT SCREW AND WASHER 2-Install supports with Proseal 890 per D350-748-143 and QSI 015 138408 exp 2/18

210 - ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.***

230 - ***VERIFY BY BATCH # TO MATCH W/O

240 - Identify and pack for shipping as per PPP D350-748-103

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	AETC-1032 FM137335	①	0	0	0
	D350-748-143TRN	1	0	0	0
	D3502-1 F161764	②	0	0	0
	D5123-7 153236	②	0	0	0
	MS21920-20 138246	2	0	0	0
	MS51958-63 FM134962	①	0	0	0
	NAS1149C0363R 138326	①	0	0	0
220-Packaging	AN4-41A 5013299	⑧	0	0	0
	AN4-6A 5013298	⑧	0	0	0
	AN5-32A 5013297	④	0	0	0
	D3500-1 5013294	④	0	0	0
	D3501-1 5013281	⑧	0	0	0
	MS21042L4	24	0	0	0
	MS21042L5 5013280	④	0	0	0
	NAS1149D0463J 5013298	32	0	0	0
	NAS1149D0563J 5013299	⑧	0	0	0

Part Specifications

Specifications could not be found.

F9035

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Item ID: D350-748-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 2/14/2017 Req'd Qty: 1.00

1

Customer:

Reference: 10/3/2017
3/1/3/2017 -mcApprovals: Process Plan: **DAS** Date: FEB 27 2017

Tooling:

Date:

Run Start ***NR1***QC: **21**
9-89

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D350-748-143	A

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPPD350-748-103 CHG001

110

BENDING MACHINE - CROSSTUBES

0.00

110

CNC Bend 1

Memo

0.07

CNC Delta 100 Bender

Bend tube as per Dwg D350-748-143 using CNC bender program D350F and Folio FT

****UNDER BEND .225" PER SIDE****

****USE (4) DT9824 SHIM BLOC TO CHECK STRAIGHTNESS****

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Item ID: D350-748-103

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/14/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

127

QC15- Crosstube Dimensional Check

0.00

127

QC

Memo

0.00

Quality Control

MARK CUT LINES

128

0.00

128

Crosstubes

Memo

0.20

Crosstubes

CUT TUBE AT HEIGHT ON FAI SHEET

VERF HEIGHT _____ BY QC 15 LEVEL INSPECTOR _____

VERF TWIST _____ BY QC15 LEVEL INSPECTOR _____

Work Order ID 157387***157387***

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Tuesday, February 21, 2017 1:11:16 PM

Item ID: D350-748-103

Accept

N900040100

Setup

Start

NS1

Revision ID:

Stop

NS2

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/14/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

0.00

130

Crosstubes

Crosstubes

Memo

0.20

Crosstubes

2- Drill Tube as per Dwg D350-748-143 Using DT8876 A,B & C Drill Jigs,
Set-up drill table as per QSI 010

3- Deburr

4- Engrave Part # and Batch # as per Dwg D350-748-143

5- Remove all marks from tube within limits of D350-748-143

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.00

Quality Control

CHECK 10 DEG HOLES WITH DT8876E (EUROCOPTER CLAMP)

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Item ID: D350-748-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 3/14/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

174 Outsource process - NDT per QSI038 4.1 0.00

174

Outsource2 Memo 8.00

Outsource process - NDT ISSUE P/O TO ACUREN: _____

176 Receive & Inspect for Damage & Mat'l Certs 0.00

176

Packaging Memo 0.00

Packaging

1X SPT 7-15

178 QC5- Inspect part completeness to step on W/O 0.00

178

QC Memo 0.00

Quality Control

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Item ID: D350-748-103

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 3/14/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

0.00

180

SprayPaint

SprayPaint

Memo

0.10

Spray Painting

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

MASK SCRIBE B# & P# AND VERIFY

1. Apply Axalta 13205S Cleaner inside and outside crosstube per QSI 005 4.1.4
BATCH: _____2. Axalta 230S Metalok inside and outside crosstube per QSI 005 4.1.4
BATCH: _____3. Prime inside and outside crosstube per QSI 005 4.2
BATCH: _____4. Paint outside of crosstube per QSI 005 4.2
BATCH: _____

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Item ID: D350-748-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 3/14/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190

QC14- Inspect Spray Paint

0.00

190

QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

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Item ID: D350-748-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 3/14/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

200

0.00

200

Crosstubes

Crosstubes

Memo

0.09

Crosstubes

INSTALL GROUND WIRE INSERT, THEN INSERT SCREW AND WASHER

***LIMIT AIR PRESSURE TO 50 PSI WHEN INSTALLING AETC-1032
INSERT AND ONLY EXPAND INSERT ONCE***1-Abrade mating surfaces of support and crosstube with 180 grit sandpaper,
clean the area with MEK or equivalent as per dwg

2-Install supports with Proseal 890 per D350-748-143 and QSI 015

A/R Proseal 890 Batch: _____
EXP: _____3-Install supports clamps Using Dt8876 as per Dwg D350-748-141, Torque to
60-80 IN-LBS.

PROSEAL CURE TIME 72 HOURS:

Start: _____

Finish: _____

***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED
FOR 72HOURS AS PER DWG.***

Work Order ID 157387

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Item ID: D350-748-103 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube
Start Date: 2/28/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 3/14/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Quality Control

Memo

0.00

***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED
FOR 72HOURS AS PER DWG.***

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH

W/O _____

220

Pick Kit

0.00

220

Packaging

Packaging

Memo

0.00

Work Order ID 157387

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Item ID: D350-748-103

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 3/14/2017 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

230

QC4- 100% Inspect kits for completeness

0.00

230

QC

Memo

0.00

Quality Control

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

240

0.00

240

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D350-748-103

Location: _____

PPP Rev: _____

250

QC21- Final Inspection - Work Order Release

0.00

250

QC

Memo

0.00

Quality Control

Picklist Print

Page 1

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Work Order ID: 157387

157387

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017

Required Date: 3/14/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 15.03.23 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D350-748-143TRN		Manufactured	No			200	Each	0.0000	1	1			
D350-748-143TRN									**				
SS Crosstube Turning Detail													
D3502-1		Manufactured	No			200	Each	40.0000	2	2			
D3502-1									**				
Support													
				<u>Location</u>				<u>Loc Qty</u>					
				LG052				40					
				150010				28					
				150683				12					
D5123-7		Manufactured	No			200	Each	136.0000	2	2			
D5123-7									**				
Clamp Cushion													
				<u>Location</u>				<u>Loc Qty</u>					
				LG052				124					
				151551				24					
				153236				100					
				LG054				12					
				139042				12					
AETC-1032		Purchased	No			200	Each	15.0000	1	1			
AETC-1032									**				
Insert													
				<u>Location</u>				<u>Loc Qty</u>					
				LG050				15					
				m133732				15					

Picklist Print

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Work Order ID: 157387

157387

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017

Required Date: 3/14/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0363R

Purchased

No

200

Each

217.0000

1

1

NAS1149C0363R******

Washer

LocationLoc QtyLoc Code

FP001

129

m133077

129

GA

79

m133077

79

ST266

9

m133077

9

MS21920-20

Purchased

No

200

Each

71.0000

2

2

MS21920-20******

Clamp

LocationLoc QtyLoc Code

FG

2

122254

2

LG050

25

m136740

25

LG056

44

m128650

1

m132675

1

m134055

42

MS51958-63

Purchased

No

200

Each

97.0000

1

1

MS51958-63******

Screw

LocationLoc QtyLoc Code

ST267

97

m131886

1

m134962

96

Picklist Print

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Work Order ID: 157387

157387

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017

Required Date: 3/14/2017

Start Qty: 1.00

Required Qty: 1.00

AN4-6A	Purchased	No	220	Each	697.0000	16	16
--------	-----------	----	-----	------	----------	----	----

AN4-6A

BOLT

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
over003	400	
M136554	200	
M136851	200	
ST345	297	
M135945	99	
M136263	198	

D3500-1	Manufactured	No	220	Each	52.0000	4	4
---------	--------------	----	-----	------	---------	---	---

D3500-1

Saddle

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
ST406	52	
145757	4	
150259	8	
151743	20	
152839	20	

AN5-32A	Purchased	No	220	Each	118.0000	4	4
---------	-----------	----	-----	------	----------	---	---

AN5-32A

Bolt

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
over004	90	
m135536	40	
m136741	50	
ST336	28	
m133988	28	

Picklist Print

Tuesday, February 21, 2017 1:11:19 PM

Work Order ID: 157387

157387

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017

Required Date: 3/14/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0463J

Purchased

No

220

Each

2,948.000

32

32

NAS1149D0463J

Washer

Location

Loc Qty

Loc Code

GA

80

M134508

13

M135056

67

ST260a

1000

M136838

1000

ST263

1868

M136665

1868

D3501-1

Manufactured

No

220

Each

186.0000

16

16

D3501-1

Bushing

Location

Loc Qty

Loc Code

ST039

98

152322

8

152871

90

ST051A

88

152322

0

155618

88

AN4-41A

Purchased

No

220

Each

143.0000

8

8

AN4-41A

Bolt

Location

Loc Qty

Loc Code

over003

80

m135978

40

m136851

40

ST342

63

m133769

63

Picklist Print

Tuesday, February 21, 2017 1:11:19 PM

Work Order ID: 157387

157387

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017

Required Date: 3/14/2017

Start Qty: 1.00

Required Qty: 1.00

MS21042L5

Purchased

No

220

Each

284.0000

4

4

MS21042L 5

Nut

Location

Loc Qty

Loc Code

GA

21

m127813

21

OVER007

100

m136866

100

ST303

163

m136450

100

m136740

63

MS21042L4

Purchased

No

220

Each

2,409.000

24

24

MS21042L 4

Nut

Location

Loc Qty

Loc Code

FP001

18

m133363

18

GA

187

m135058

187

OVER007

1500

m136450

500

m136838

1000

ST303

704

m136648

704

Picklist Print

Page 6

Tuesday, February 21, 2017 1:11:19 PM

Work Order ID: 157387

157387

Parent Item: D350-748-103

D350-748-103

Parent Item Name: AS350 / AS355 Stainless Steel Fwd Crosstube

Start Date: 2/28/2017

Required Date: 3/14/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0563J

Purchased

No

220

Each

632.0000

8

8

NAS1149D0563.J

Washer

Location

Loc Qty

Loc Code

GA

187

m135774

187

ST263

445

m136295

445

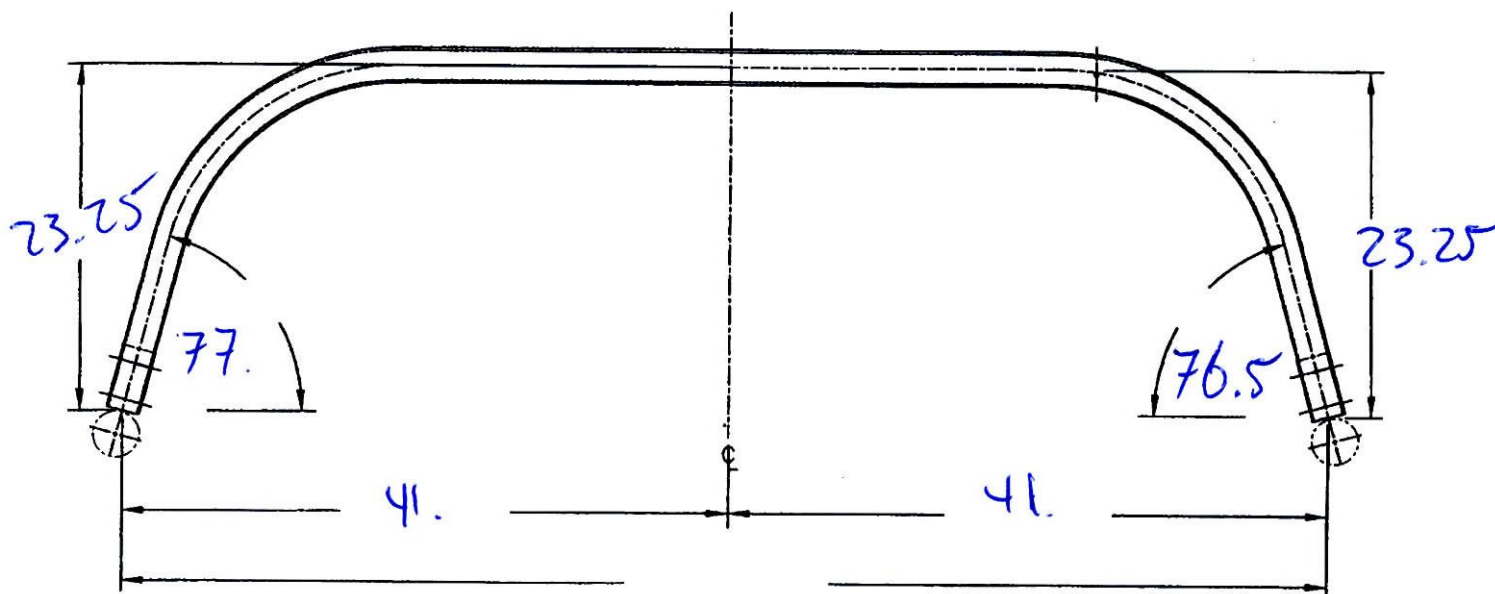
Tuesday, February 21, 2017 1:11:19 PM

Shop Packet Print

Page 6

DART AEROSPACE LTD		Work Order:	157387
Description: Crosstube High Fwd, SS (AS350/355)		Part Number:	D350-748-103
Inspection Dwg: D350-748-143 Rev: A		Page 1 of 1	

Required Dimension	Min	Max
Height	23.00	23.50
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.55	82.05
Bending Passes	7	--
Crushing	--	8%
Twist	--	0.38



	Side A	Side B
Bending Passes	39	39
Crushing	6.6	6.4
Comments		
twist - 0.055"		

QC15 Inspection	PD
Date	17.11.2

Rev	Date	Change	Revised by	Approved
A	15.09.09	New Issue	KJ	AA

Item	Qty	Part Number	Description
	-143		
	X	D350-748-143	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
1	1	D6021-125	CROSSTUBE
2	2	D3502-1	SUPPORT
3	2	D5123-7	CLAMP CUSHION
4	1	AETC-1032	INSERT
5	2	MS21920-20 OR MS21920-21/-22	CLAMP (PER DART SPEC. M-MS21920-20/-21/-22)
6	1	NAS1149C0363R	WASHER (OR AN960C10)
7	1	NAS1635-3-8	SCREW (OR MS51958-63)
8	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6021-125 (17-4PH)
FINISHED LENGTH AFTER TURNING = 112.270±0.06 (AFTER BENDING/TRIMMING = 110.27 REF)
- 2) FINISH: PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCE: PER DART QSI 018 UNLESS OTHERWISE NOTED.
WALL THICKNESS ECCENTRICITY PER DART QSI 038 7.2
MIN. ALLOWABLE WALL IS -0.020 FROM NOMINAL
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-143" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.290 HOLE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.

TURNING

- 10) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.

BENDING

- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES PER SIDE. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D. ON TOP HALF OF BEND, AND 8% ON BOTTOM HALF OF BEND.
- 12) MAX AMPLITUDE OF RIPPING ALONG BENT PORTION OF THE TUBE IS 0.030 (ZN A1-3)
- 13) MAX TWIST: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.38 (ZN C1-3).

ASSEMBLY

- 14) TO INSTALL D3502-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.02" TO 0.05" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 157387 MJS
1702-27

UNDER REVIEW

01/15/12 9/16/29
CRF 18-561

DEO ATTACHED

RELEASED

2015 MAR 18

4 ECU 15-547

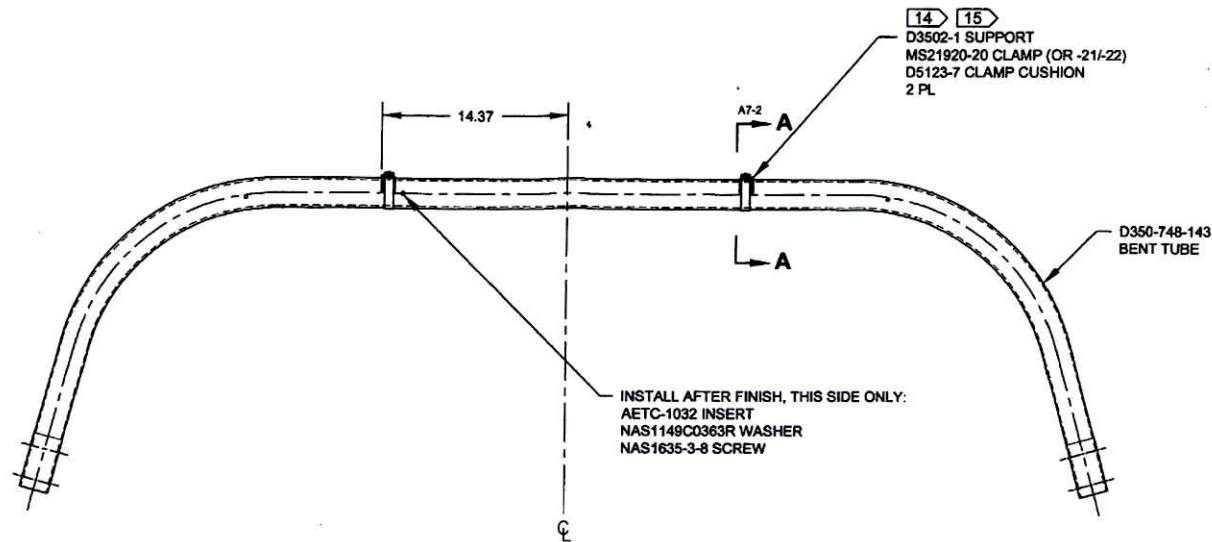
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REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	15.01.21		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

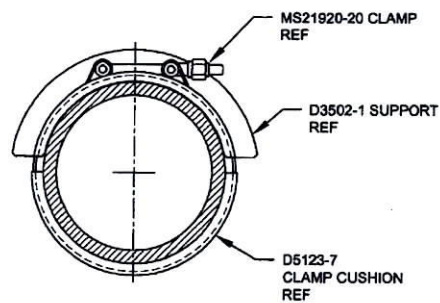
DRAWING NO. D350-748-143
TITLE CROSSTUBE (AS 350/355 HI FWD)

REV. A
SHEET 1 OF 4
SCALE
NTS

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**D350-748-143
ASSEMBLY DETAIL**



SECTION A-A D4-2
SCALE 6X

DEO ATTACHED

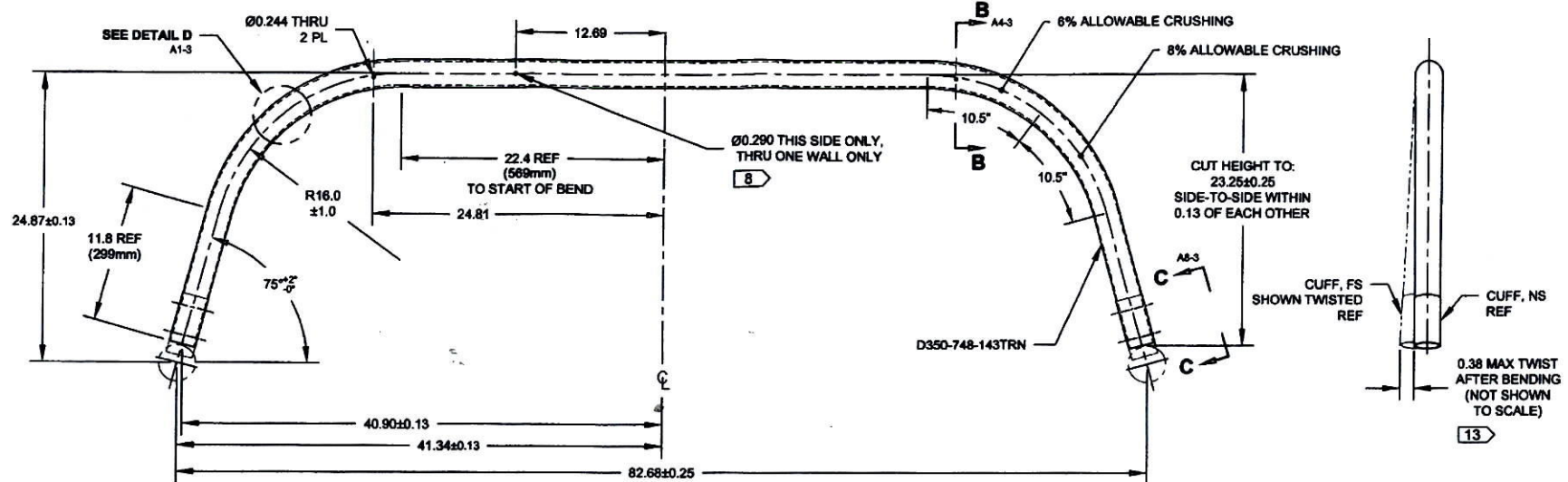
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2015 MAR 18
47 ECU-15-547

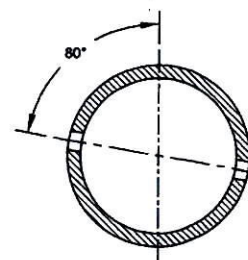
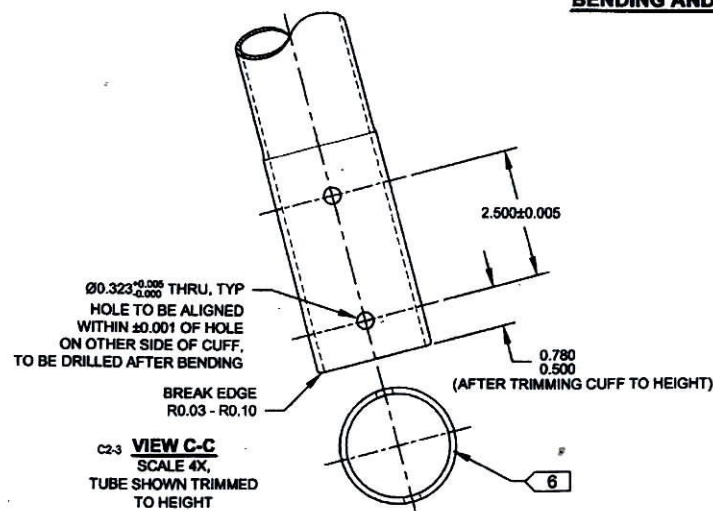
UNDER REVIEW

47 15/1/23
9/2/23

DESIGN	47	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	47	DRAWING NO.	REV. A
CHECKED	47	D350-748-143	SHEET 2 OF 4
MFG. APPR.	47	TITLE	SCALE
APPROVED	47	CROSSTUBE (AS 350/355 HI FWD)	NTS
DE APPR.	47	COPYRIGHT © 2015 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	15.01.21		



**D350-748-143
BENDING AND DRILLING DETAIL 11**



SECTION B-B D3-3
SCALE 6X

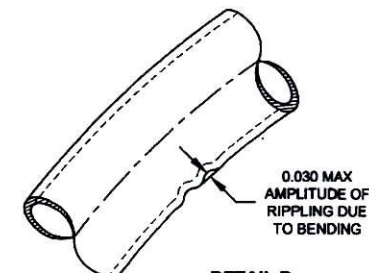
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2015 MAR 18

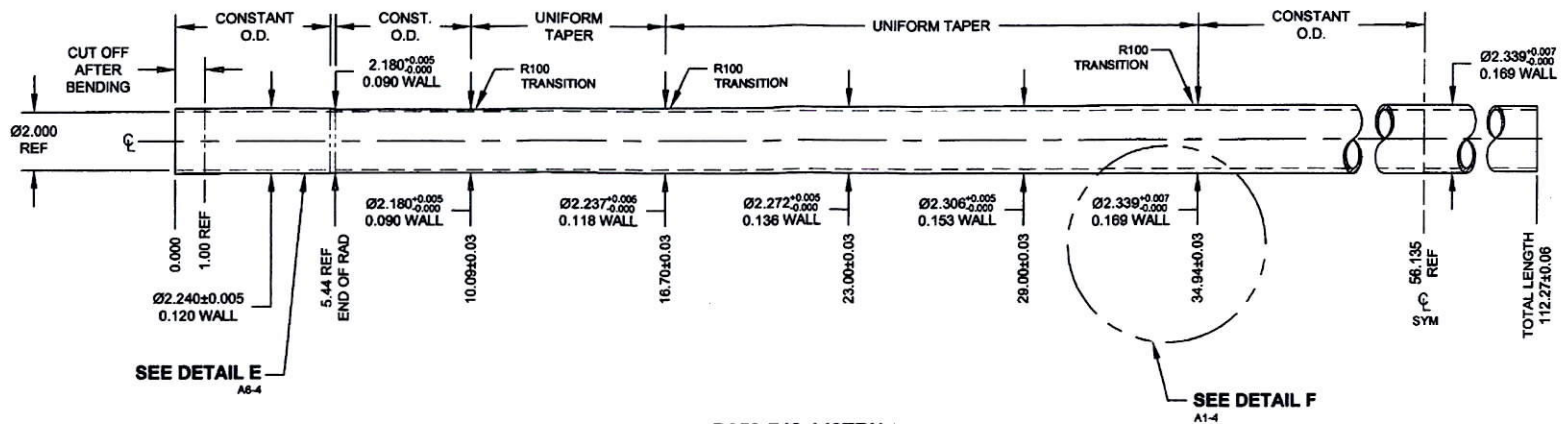
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OK 15/4/28 9/6/29

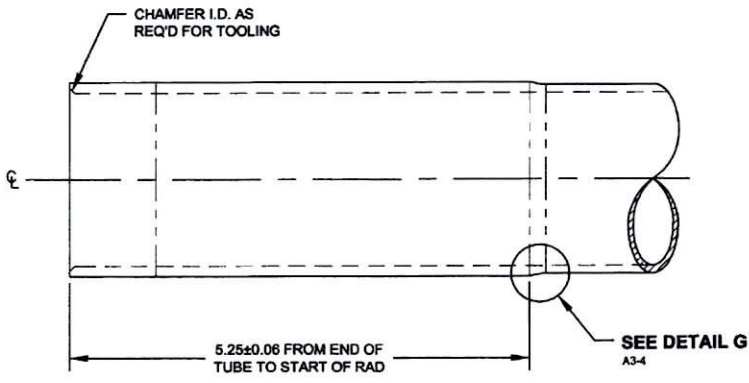


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DRAWN	90	HAWKESBURY, ONTARIO, CANADA	
CHECKED	A.P.	DRAWING NO.	REV. A
MFG. APPR.		D350-748-143	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	15.01.21	COPYRIGHT © 2015 BY DART AEROSPACE LTD	
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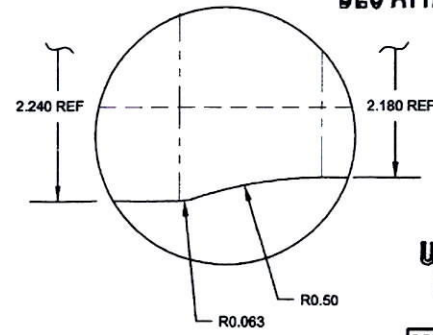


D350-748-143TRN
TURNING DETAIL

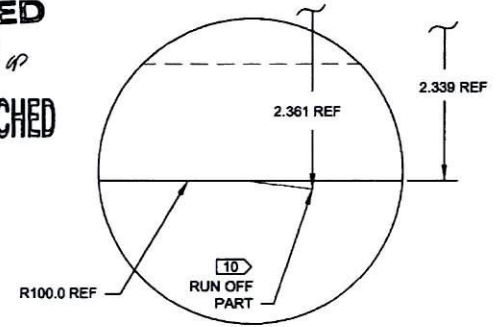
RELEASED
2015 MAR 18
DEO ATTACHED



DETAIL E:
CROSTUBE CUFF C7-4
SCALE 3X



DETAIL G:
CUFF TRANSITION A5-4
NOT TO SCALE



DETAIL F:
TOOL RUN-OFF C3-4
NOT TO SCALE

UNDER REVIEW
15/1/26

DESIGN	90	DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D350-748-143	SHEET 4 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	15.01.21	COPYRIGHT © 2015 BY DART AEROSPACE LTD	
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DRAWING NO. D350-748-143	TITLE CROSSTUBE	REV. A	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D350-748-143-A-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>q</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>q</i>	APPROVED <i>q</i>		DE APPR. <i>q</i>		
DATE 15.11.18	DATE 15.11.18	DATE 16.02.19	DATE FEB 19 2016		DATE 2016.02.19		

AMEND NOTE 2 (SHEET 1) AS FOLLOWS:

- 2) FINISH: PREPARE SURFACE PER DART QSI 005 4.1.4
 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 PAINT OUTSIDE PER DART QSI 005 4.2
 OR
 POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3

RELEASED
 2016-02-26

ECN 16-534

q

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Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038325

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO038325
PO Date: 11/10/17
Due Date: 11/10/17
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Baker, Diane
Phone: dbaker@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items												
Line Item	Job	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	166319	D4883-7	-	End Fitting Outsource process - NDT per QSI038 4.1 Issue P/O: _____ LPI Per ASTM 1417 LEVEL 2 Certificate of conformaty is required.		Firmed	11/10/17	3 pcs	0 pcs	3 pcs	\$76.00/pcs	\$228.00
2	166320	D4880-1	-	Strut		Firmed	11/10/17	4 pcs	0 pcs	4 pcs	\$76.00/pcs	\$304.00
3	164477	D119- 796-141	-	Fwd Crosstube Installation Without Step (No Hardware) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 038Or Issue P/O: _____ LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
4	158989	D350- 748-203	-	AS350 / AS355 Stainless Steel Aft Crosstube ISSUE P/O TO SKY SERVICE: _____		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
5	164645	D350- 748-203	-	AS350 / AS355 Stainless Steel Aft Crosstube ISSUE P/O TO SKY SERVICE: _____		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
6	164731	D350- 748-103	-	AS350 / AS355 Stainless Steel Fwd Crosstube ISSUE P/O TO SKY SERVICE: _____		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
7	157387	D350- 748-103	-	AS350 / AS355 Stainless Steel Fwd Crosstube ISSUE P/O TO SKY SERVICE: _____		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00
8	162388	D119- 796-241	-	Aft Crosstube Installation Without Step (No Hardware)		Firmed	11/10/17	1 pcs	0 pcs	1 pcs	\$76.00/pcs	\$76.00

**skyservice****Work Order Traveler**
Sky Service F.B.O. Inc.

PO 038325

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO33970	Customer:	Dept: NDT YUL	Reference: PO038325
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT ON 8 CROSSTUBES , 3 END FITTINGS AND 4 STRUTS AS PER PO038325

3 END FITTINGS , P/N# D4883-7 , J/S# 166319

4 STRUTS , P/N# D4880-1 , J/S# 166320

2 STAINLESS STEEL FWD CROSSTUBES , P/N# D350-748-103 , J/S# 157387 , 164731

2 STAINLESS STEEL AFT CROSSTUBES , P/N# D350-748-203 , J/S# 164645 , 158989

2 AFT CROSSTUBES , P/N# D119-796-241 , J/S# 163790 , 162388

2 FWD CROSSTUBES , P/N# D119-796-141 , J/S# 164477 , 165700

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-13 ***NO CRACK FOUND*** PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , EMU. MPO15896, DEV. MPO11715 , UV LIGHT M-20142						NOV 10 2017	
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp 	Date: NOV 10 2017
Name: RAFIK MELIKIAN		



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200

Inventory

Operation Number	Operation	Serial Number	Job	Quantity	Weight	Original Serial Number	Location	Container	Status	Added	Special Comments	Label	Supplier	Change No
Part Number: D350-748-103 Revision: AS350 / AS355 Stainless Steel Fwd Crosstube														
250	QC21-FG	S010258	157387	1 Ea	0	S010258	FG039		Stock	11/15/2017	Issue Container			CHG001
Operation Totals:		1		1	0									
Part Totals:		1		1	0									
Part Number: MS51958-63 Revision: Screw														
10	Receive Pcs	S011807	157387	1 pcs	0	M134962	Crosstube		Stock	11/20/2017	Issue Container			
Operation Totals:		1		1	0									
Part Totals:		1		1	0									
Totals:		2		2	0									

Plex 1/8/2018 12:53 PM Dart.Boucher.Sylvie